B

# Appendix B

# DECLARATION OF

# STANLEY M. BESEN AND STEVEN R. BRENNER

Charles River Associates Incorporated

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## I. INTRODUCTION AND EXECUTIVE SUMMARY

1. The merger of MCI WorldCom and Sprint will occur in a telecommunications marketplace vastly different from the one that existed only a few years ago. The merged firm will face competition not only from AT&T, but also from the literally hundreds of new firms that have entered to add to competition in supplying long distance service. These new carriers, several of which have their own, new, high capacity facilities, together are capturing an ever larger share of long distance customers. These entrants are likely to be joined soon by firms such as Bell Atlantic and SBC, as the Regional Bell Operating Companies (RBOCs) meet the requirements of Section 271 of the Telecommunications Act of 1996 to provide in-region interLATA long distance service; the RBOCs are expected to become significant competitors very soon after their entry. In addition, large sophisticated purchasers of telecommunications services, and the integrators that serve them, are able to produce these services by combining inputs from a wide and growing variety of suppliers, further increasing the competition faced by traditional long distance carriers. Because the structure of the market in which the merged firm will operate is so different from what it is even today, conventional measures of the effect of the merger based on current market shares, or even sophisticated analyses of the effect of the merger that fail to account for these differences, are likely to be highly misleading. One cannot assess the competitive effects of the MCI WorldCom-Sprint merger without taking these changes into account.

* Statements of qualifications are attached.

2. MCI WorldCom and Sprint customers now have a substantially larger, and substantially more attractive, set of market alternatives than they did only a few years ago. Customers who in the past might have only been able to switch to AT&T or Sprint if, say, MCI were to raise prices, now can switch to, among others, Frontier, Qwest, Williams, or Level 3, or to any of a number of other firms that resell service using the capacity of those carriers. Large corporations demanding "high end" services can "self-supply" these services, or they can outsource them to integrators such as EDS. In turn, integrators can combine transport capacity purchased from any of a large number of carriers with features they supply themselves. In the near future, the range of alternatives will be expanded to include RBOCs. Technological developments are expanding the range of services that can satisfy specific telecommunications demands and thereby the range of potential suppliers, as illustrated by the new "voice over data" services that are being offered. These developments in effect ensure that the diversion of customers from the combined MCI WorldCom-Sprint to other carriers in response to any price increase would likely be substantially greater than it would have been even five years ago, and will be even greater in the near future. Because the merged firm could expect a larger fraction of its customers to be lost to other firms if it were to raise prices, its incentive to do so is commensurately reduced.

3. At the core of the changes in long distance communications in recent years has been the emergence of large capacity networks controlled by new entrants. In large part these new networks are being built in response to the burgeoning demand for bandwidth to carry data traffic, but that capacity is available to carry all types of traffic. Indeed, the distinction between data and voice traffic is becoming ever more blurred.

4. Between 1995 and 1998, a period during which, according to FCC data, interexchange carriers added 62.8 million total fiber system route miles (the most generally available measure

of network size), new carriers added 44.7 million route miles, or more than 71 percent of the total increase over that period; by 1998 these carriers accounted for more than 30 percent of all fiber route miles. Just one carrier, Qwest, has reported that the currently "lit" portion of its network has sufficient capacity to handle the current combined traffic of AT&T, MCI WorldCom, and Sprint!

5. The merging parties, along with AT&T, control an ever diminishing share of long distance capacity. They face additional competitive pressures from new vertically integrated carriers using their own capacity to compete, as well as from new carriers that lease and resell that capacity. These pressures generate competition both for final consumers—residential users and small and large businesses—and for the wholesale business of other carriers. Thus, the growth in the capacity of new entrants not only has increased directly the competition faced by AT&T, MCI WorldCom, and Sprint, but has also reduced the dependence of resellers on them.

6. Not only will the proposed merger occur in a marketplace in which there are many more competitive alternatives than there were only a few short years ago, but the ability of emerging suppliers to accommodate additional customers in the event of a price increase is substantially greater. Much of the increased fiber capacity is in the hands of new carriers, much of it is still unused, and it can be brought into service relatively quickly and at reasonable cost. Because increases in price can be countered by significant expansions in output by new and smaller long distance carriers, the ability of larger carriers to raise prices is reduced. Moreover, because the owners of new networks already have plans to "light" additional amounts of their fiber capacity over time, responding to a price increase would only involve accelerating these plans, thus reducing the risks that new carriers would incur in responding.

7. The availability of substantial amounts of additional unused fiber capacity—which can be used by the carriers themselves, by pure resellers to which they supply capacity at

wholesale, and/or by firms such as switch-based resellers or integrators that combine transmission capacity with other inputs—increases the elasticity of supply of new carriers and, in turn, the elasticity of demand faced by traditional ones. These factors together constitute a very significant constraint on the ability of a combined MCI WorldCom-Sprint to raise prices after their merger.

8. The increasing importance of new carriers has been evident throughout the telecommunications marketplace, but perhaps nowhere more than in the provision of services to residential and small business customers. Emerging carriers have captured a significant and growing share of residential customer pre-subscriptions and direct dial long distance minutes. In addition, these carriers have been responsible for a number of innovations, including the introduction of "dial around," or transactional, services that increasingly compete with the subscription services of the three "old line" interexchange carriers. Indeed, some users make relatively little use of the services offered by those carriers to which they nominally subscribe. Dial around services have been so successful that MCI WorldCom, AT&T, and Sprint have responded by introducing similar services themselves.

9. Raw transport capacity is not the only telecommunications input that has become more widely available, and available from a wider range of sources, in recent years. The technical expertise involved in telecommunications system management and integration, and in providing many "backoffice" services, can now be obtained from a number of new carriers, from system integrators, from specialized software vendors and, in some cases, from the consumers of telecommunications services themselves. This further expands the range of alternative suppliers available even to those users with sophisticated telecommunications requirements.

10. The growth and success of emerging carriers, those using their own capacity and those using the capacity of other newcomers, together with the competitive strength of AT&T, constrain severely the ability of MCI WorldCom and Sprint to raise prices after their merger, but these factors will not be the only constraint. In the relatively near term, a number of the RBOCs are likely to satisfy the requirements of Section 271 of the Telecommunications Act of 1996. Most industry analysts believe that the RBOCs will become formidable competitors in long distance markets, largely because of their existing customer base and technical sophistication. Moreover, the ability of the RBOCs to become significant competitive forces quickly is enhanced both by the long distance capacity already under their control and by their access to the long distance capacity controlled by other new entrants.

11. The cumulative effect of these developments complicates any assessment of the state of competition in the provision of telecommunications services, but no accurate assessment can ignore these developments. It is clear that an accurate assessment of the state of competition cannot be based on the currently reported shares of traditional telecommunications carriers. Only by accounting for the role of a growing number of telecommunications suppliers, the prospective entry of RBOCs into markets from which they had previously been excluded, the expanded role of integrators, and the provision of services using new technologies can the effects of the merger of MCI WorldCom and Sprint be adequately assessed.

12. As conditions in the telecommunications marketplace have changed, many telecommunications firms have been restructuring themselves in attempts to find the most efficient scope and scale of services to offer. Some are integrating in an effort to take advantage of what they believe are particular economies of scope or efficiencies of vertical integration in production, or to deliver bundles of services they believe consumers demand because of economies of scope in consumption. Others, in contrast, are concentrating on

particular functions. It is difficult to say with certainty what will be the most efficient structure—and indeed it is entirely possible that multiple business structures and strategies will coexist. What can be said with more certainty is that market tests of different structures and strategies—such as those being pursued by MCI WorldCom and Sprint—are important in determining the most efficient ways for telecommunications firms to operate their businesses and that consumers will benefit from production patterns adapting efficiently to new conditions. In the absence of significant competitive concerns, there are real benefits to permitting such tests to proceed.

13. In assessing the likely impact of the MCI WorldCom-Sprint merger, it is important to examine its effects on the ability of the merged firm to offer services that are demanded by telecommunications users, and to recognize the firms' conviction that their merger will result in an efficient organization for their production and delivery of telecommunications services. MCI WorldCom and Sprint both believe they can realize greater economies of scope or scale in production, and that their merger will permit the combined entity to offer more new services, or to offer some new or existing services at lower cost than MCI WorldCom and Sprint could absent the merger. Similarly, some purchasers may prefer to purchase combinations of services—perhaps because their costs are reduced by doing so—and the merger may permit the combined firm to offer some service combinations that neither of the merging parties could have provided on its own.

14. Of great importance, the merger can improve the efficiency with which MCI WorldCom and Sprint can offer facilities-based local exchange service, or all-distance service, in competition with the Incumbent Local Exchange Carrier (ILEC). The merger also can help the combined entity to offer enhanced integrated broadband local services competing with

DSL-based services over ILEC facilities and with service relying on high-speed cable modem services and cable television plant.

15. Combining the operations of the two companies in a given service area will permit MCI WorldCom and Sprint to share facilities, and thus achieve lower costs, than if each were required to own and operate separate facilities. Indeed, in some instances, neither company alone could justify the costs of construction and operation of certain facilities, increasing their dependence on the ILEC, a dependence they may be able to reduce by combining operations. These efficiencies, and perhaps others, would make the combined company a more effective local competitor than either could become separately.

16. MCI WorldCom and Sprint each control important local assets in different geographic areas. Both companies hold significant numbers of Multichannel Multipoint Distribution Service (MMDS) licenses that permit them to offer fixed wireless telecommunications services. MCI WorldCom has entered a number of markets as a Competitive Local Exchange Carrier (CLEC). And, finally, Sprint is the ILEC in a number of mostly rural and suburban markets. Combining these local assets will permit the achievement of certain economies of national operation, and thus enhance the ability of the two companies to compete in providing local service.

17. For example, many of the costs of the ongoing development of product features or support system capabilities are largely independent of the number of customers a company may serve, so that per-customer costs can be substantially reduced by expanding the potential customer base. Similarly, the ability to partner with suppliers of complementary inputs—including suppliers of network and consumer premises equipment and developers of services to be carried on the telecommunications platform of the combined company—may be enhanced if these partners can provide their services to a larger number of customers. The ability to reach

more customers can make it easier to earn a return on the investments necessary to develop MMDS-based local service into a competitive option. Finally, the value of some services, such as Sprint ION, may depend on the number of other customers that use the same service. Expanding the combined company's customer base can enhance the value of its offerings to each of its customers by increasing the proportion of its traffic that remains "on-net."

18. The remainder of this paper is organized as follows: Section II first examines the evidence and implications of the growth of long haul capacity in the hands of new entrants, then discusses the supply of that capacity at wholesale to other carriers. Section III examines the evidence concerning the success of new entrants in capturing long distance business, considering separately the evidence for residential and small business customers and that for larger business customers, then considers the impact of RBOC entry. Section IV discusses the efficiencies that can be expected from the merger and their implications for competition in the supply of local services.

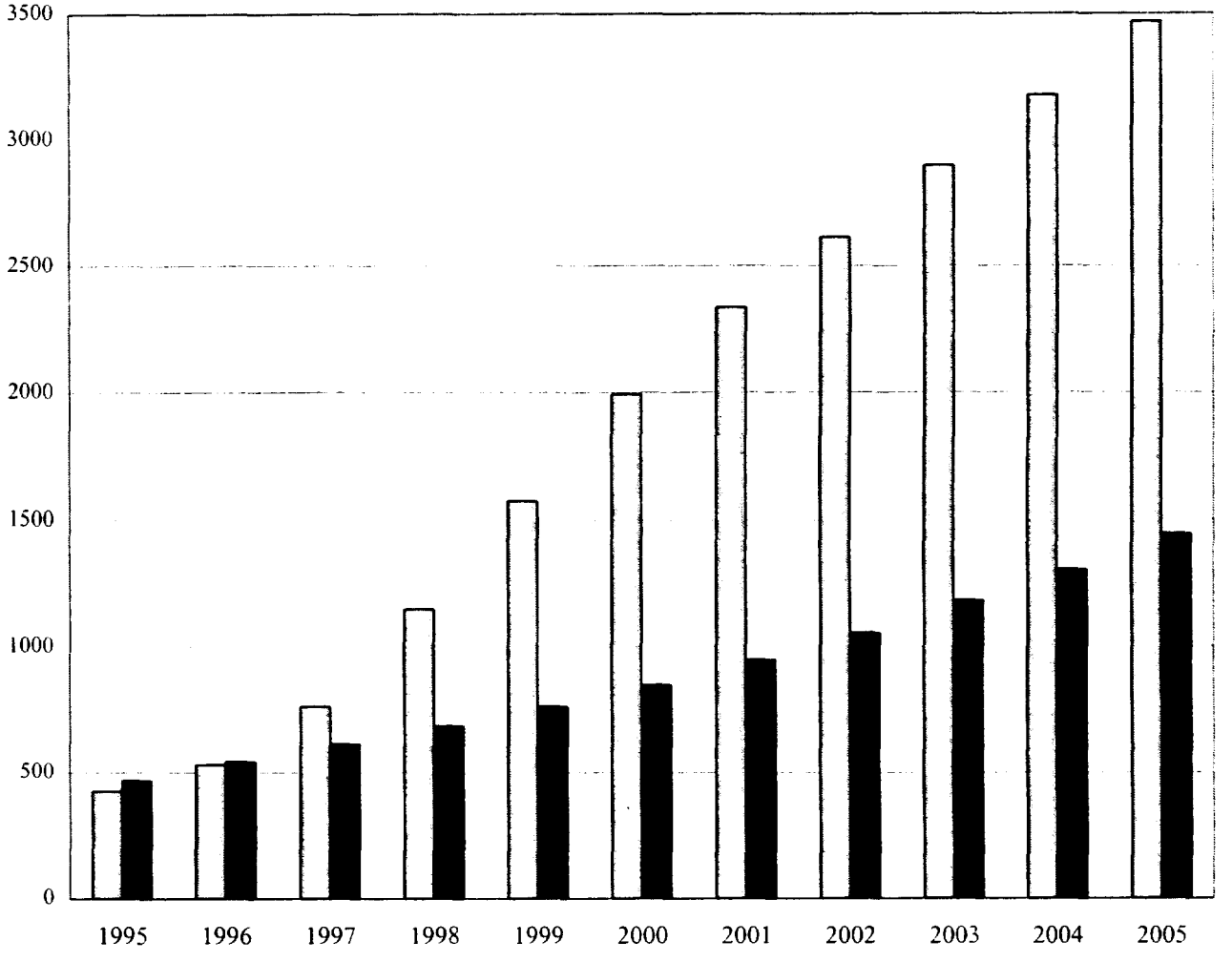
## II. THE ROLE OF TRANSPORT CAPACITY

19. The telecommunications industry continues to experience significant growth in transport capacity, as fiber optic networks are constructed by new entrants and the networks of incumbents are extended and equipped with advanced opto-electronics. These investments in transport capacity are driven by expectations of rapid growth in the demand for data and voice services over the next decade. There is consensus among industry forecasters that the demand for bandwidth-intensive data services will grow quite rapidly. The volume of voice traffic is also expected to grow, although at a more moderate pace. Figure II-1 below reports recent trends and projections that indicate the growing demand for data and voice services.

20. In the following sections, we describe the significant network buildouts that have responded to this booming demand. In Section IIA, we quantify the aggregate increase in fiber capacity and describe buildouts on a carrier-by-carrier basis, focusing especially on the role of newer carriers. We also document the current and projected capacity of these networks and the technologies that they utilize. In Section IIB, we examine the implications of these buildouts. In Section IIC we examine competition in the supply of wholesale services, focusing especially on the role of emerging carriers.

## Figure II - 1

## Forecasts for the Volume of U.S. Voice and Data Sales




Sources:
Frost & Sullivan, *The U.S. ATM, Frame Relay, SMDS, and X.25 Public Data Services Market*, 1999, p. 4-7.
Frost & Sullivan, *North American Long Distance Service and Reseller Markets*, 1999, p. 4-8.

interexchange carriers increased by two-thirds between 1994 and 1998.[1] As can be seen in Figure II-2 below, carriers other than AT&T, MCI WorldCom, and Sprint have accounted for much of this growth. The share of route miles owned by interexchange carriers other than the three old-line carriers increased from 5 percent in 1994 to 31 percent in 1998.[2]

24. If anything, this trend has been accelerating. The total fiber system route miles owned by interexchange carriers increased by 34,180,000 miles between 1997 and 1998, an increase of 27 percent over this one-year period.[3] Of this increase, 90 percent was accounted for by the expansion of carriers other than AT&T, MCI WorldCom, and Sprint. Together, twelve smaller carriers controlled 31 percent of the total of 159,779,000 reported route miles in 1998, and their share continues to increase as their nationwide buildouts near completion. Of the fifteen interexchange carriers that reported their fiber system route miles in 1998, six were not present in the FCC's 1994 survey and four of these (Caprock, Metromedia, NEON INC, and Williams) were not even identified in the FCC survey in 1997.

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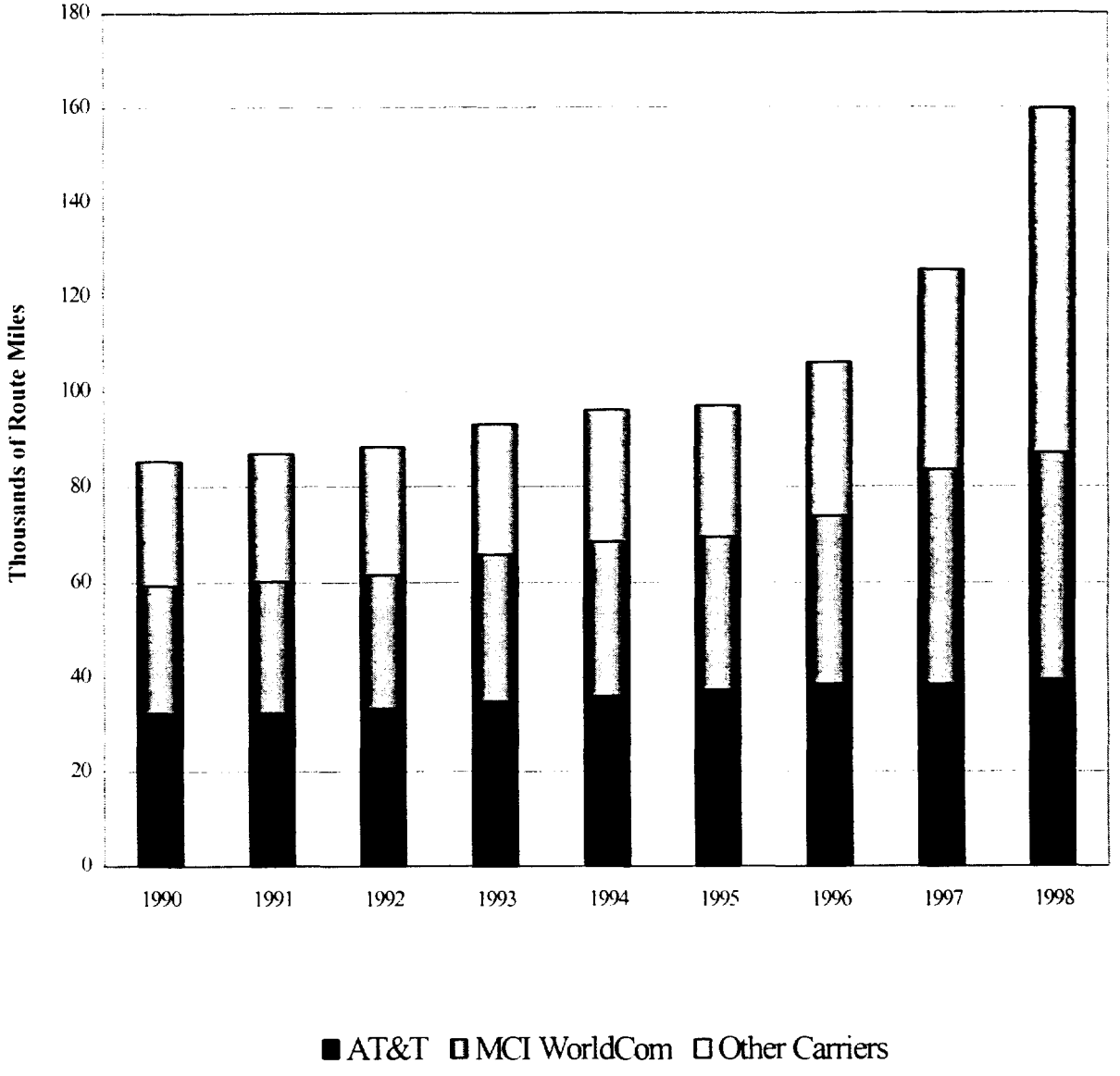
[1] Jonathan M. Kraushaar, *Fiber Deployment Update: End of Year 1998*, FCC, Industry Analysis Division, Common Carrier Bureau, Table 1. Fiber system route miles give the total mileage of fiber routes in a network.

[2] Fiber route miles of WorldCom have been combined with those of MCI for all years for purposes of these calculations and those presented in Figure II-1.

[3] The authors of the FCC study attempt to measure carrier-owned facilities while excluding leased facilities. However, they note a number of cases where a carrier included leased facilities in its reported route miles.

**Figure II - 2**

## Fiber System Route Miles of Interexchange Carriers




Source:
Jonathan M. Kraushaar, *Fiber Deployment Update: End of Year 1998*, Industry Analysis Division, Common Carrier Bureau, FCC, September 1999, Table 1.

25. Statistics on fiber miles provide an alternative measure of the fiber capacities of interexchange carriers.[4] By this measure, several carriers control network capacity that equals or approaches that of Sprint. Sprint reported to the FCC that it controlled 471,000 fiber miles in 1998. In the same year, Qwest reported control of 567,000 fiber miles, Williams of 410,000 fiber miles, and GST Telecom of 390,000 fiber miles.[5]

26. Furthermore, it is important to realize that the very great potential capacity of fiber means that emerging carriers are in no way constrained to a share of output similar to their proportions of total route miles or fiber miles. New technologies, such as dense wavelength division multiplexing (DWDM), have greatly increased the potential transmission capacity of each individual glass fiber and of installed fiber networks.[6] As a result, the fiber already installed by emerging carriers can carry a much greater proportion of total communications traffic than their current shares of route miles or fiber miles.[7]

27. The transport capacity controlled by emerging interexchange carriers continues to expand rapidly, as the construction of significant new national and regional fiber optic networks nears completion. Current information shows very substantial increases over the

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[4] Fiber miles are the total number of miles of fiber cable used in all routes (rather than just the miles of the routes themselves), including both lit and unlit fiber; *Fiber Deployment Update: End of Year 1998*, p. 20.

[5] Data reported in this paragraph are from *Fiber Deployment Update: End of Year 1998*, Table 2.

[6] See the discussion in *In the Matter of Application of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc.*, FCC, CC Docket No. 97-211, Memorandum Opinion and Order, adopted September 14, 1998 (hereafter FCC WorldCom/MCI Order), para. 64.

[7] For example, consider Qwest's statement that the currently lit portion of its 48-fiber network has sufficient capacity today to handle all of the traffic now carried by AT&T, MCI WorldCom, and Sprint. (*Response to Comments on Applications for Transfer of Control of Qwest Communications International Inc. and U S West, Inc.*, FCC, CC Docket No. 99-972, p. 13), together with FCC data that as of 1998 Qwest had lit only 2 percent of its fiber miles (see *Fiber Deployment Update: End of Year 1998*, Table 3).

figures reported to the FCC for 1998. The following describes the status of a number of the major new networks.

28. Qwest has a substantial nationwide fiber network employing IP and SONET ring architecture. The network reaches 18,815 route miles, connecting 150 major cities throughout the United States, and has 888,000 fiber miles.[8] Qwest reported that it had activated more than 12,500 miles of its network by the end of 1998.[9]

29. Williams Communications sold its original fiber facilities to LDDS (later WorldCom) in 1995.[10] Since that time, it has built a new national fiber optic network through construction and the acquisition of dark fiber. Williams reports that it has 22,400 route miles of fiber currently in the ground, with 19,500 miles in service, a five-fold increase over the route miles that the FCC reported Williams had in 1998.[11] The network is already present in most metropolitan areas across the United States. Williams projects completion of 26,000 miles by the end of 1999 and an additional 6,000 miles by the end of 2000. It has also purchased 6,200 route miles of dark fiber from IXC, and plans to acquire an additional 2,000 route miles of dark fiber by the end of 2000. The network's ATM architecture is equipped with DWDM electronics.

30. IXC Communications, Inc. completed the first phase of its national network expansion in April 1998, bringing its capacity to 9,300 route miles. This network, which will be extended

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[8] http://www.qwest.com/aboutqwest/facts.html, visited November 9, 1999; http://www.qwest.com/press/story.asp?id+149, visited November 11, 1999.

[9] Qwest Communications International, Inc., SEC Form 10-K405, filed March 22, 1999, p. 7.

[10] Williams did retain ownership of a single fiberoptic strand along 9,700 route miles of its original network, although the terms of the sale to LDDS precluded Williams from reentering the communications business until January 1998. http://www.williamscommunications.com/aboutus/index.html#, visited November 6, 1999.

[11] http://www.williamscommunications.com/network/index.html, visited November 9, 1999.

to 15,000 route miles by the end of 1999, has a SONET architecture equipped with DWDM electronics.[12]

31. Frontier Communications has partnered with Qwest in constructing a significant national fiber optic network, which will have a multi-layered architecture equipped with DWDM electronics. At completion, the network will span approximately 20,000 miles and will connect 120 U.S. cities.[13] According to the FCC's *Fiber Deployment Update*, Frontier had deployed 12,261 route miles of fiber by the end of 1998.[14] Frontier leases fiber from Qwest and Williams to serve its growing customer base while the buildout progresses.

32. Level 3 Communications is in the process of building a 16,000 mile national fiber optic network.[15] It has already completed construction on 5,954 intercity route miles that connect 26 metropolitan areas and expects to complete construction of 94 percent of its planned 16,000 route miles by the end of 2000.[16] Level 3 leases over 8,300 route miles of fiber from Frontier and over 7,000 miles from IXC Communications to serve its growing customers while its buildout progresses. The network is based on an IP architecture.[17]

33. Caprock Communications is a long distance provider with a growing regional network in Texas and its neighboring states. It expects to complete 3,000 miles of its fiber optic

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[12] http://www.ixc-comm.com/products/network/network_main.html, visited November 9, 1999.

[13] http://www.frontiercorp.com/about/network/index.html, visited November 9, 1999.

[14] *Fiber Deployment Update: End of Year 1998*, Table 1.

[15] http://www.level3.com/Content/1,1233,us|network|networktoday,00.html, visited November 9, 1999.

[16] http://www.level3.com/Content/1,1233,us|network|buildoutprogress,00.html, visited November 11, 1999.

[17] http://www.level3.com/Content/1,1233,us|network|networktoday,00.html, visited November 9, 1999.

network by the end of 1999 and an additional 3,100 miles by the end of 2000.[18] The OC-48 SONET ring architecture of Caprock's network is equipped with DWDM electronics.

34. McLeodUSA is a long distance provider with a growing regional network in 12 Midwest and Rocky Mountain States. Most of McLeod's current transport capacity is in Iowa and Illinois, but it plans to develop a regional network that extends from Idaho to Indiana. McLeod's fiber optic network currently covers 9,400 route miles.[19]

35. GST Telecom was founded in 1994 to provide retail voice and data services in the western United States. Its current network includes 2,000 route miles in southern California, Nevada, and Arizona.[20] Construction is underway to extend the network from Seattle to Houston. The company expects to have 6,600 operational route miles by the end of 1999. GST's buildout combines construction and leasing of fiber networks. For example, GST has agreed to lease and operate fiber that is owned by the Pasadena Water and Power Department.[21] The city's fiber optic network will connect GST's switches in Los Angeles and Riverside, CA.

36. A growing number of interexchange carriers are leasing fiber optic networks from electric and gas utilities that have built networks alongside their own transmission and distribution lines both for internal communications and for leasing to telecommunications carriers. As of 1997, these utilities had installed 40,000 route miles of fiber optic cable, with plans to add 38,000 route miles in the following years.[22] In a 1997 survey by the United

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[18] http://www.caprock.com/loc.html, visited November 9, 1999.

[19] http://www.mcleodusa.com/pressreleasearchive/singlestory.php3?pid=61, visited November 9, 1999.

[20] http://www.gstcorp.com/network/upper_frame.html, visited November 9, 1999.

[21] http://www.gstcorp.com/investor/press_print/gen170.html, visited November 9, 1999.

[22] *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, FCC, CC Docket No. 98-146, adopted January 28, 1999, para. 40.

Telecom Council, 19.1 percent of the utilities responding to the survey indicated that they lease dark fiber, while 11.5 percent of the utilities indicated that they already marketed fiber to interexchange carriers, and 14.0 percent indicated (in 1997) that they planned to do so by the year 2000.[23] The FCC's 1998 *Fiber Deployment Update* reports that Norlight shares 39.8 percent of its 18,000 fiber miles with electric utilities.[24] More than 2 percent of AT&T's 1,296,000 fiber miles are shared with electric utilities.

## B. Implications of the Growth of Transport Capacity

37. The expansion of transport capacity and the increasing amount and proportion of this capacity under the control of carriers other than AT&T, MCI WorldCom, and Sprint, have important implications for competitive analyses. The expansion likely presages, and certainly will allow, the continued increase in sales of telecommunications services by emerging carriers—with or without the proposed merger. Carriers that have already sunk investments in these basic transport facilities must make fewer additional investments, and incur lower incremental costs, to supply telecommunications services than if they were starting from scratch. Furthermore, it would make economic sense for a company to invest in constructing these facilities only if, ultimately, that company expected either to sell telecommunications services utilizing this capacity, or to sell the underlying capacity to other carriers who would sell services. Indeed, it makes economic sense for carriers to attempt to utilize as fully as possible the capacity in which they have invested. For example, carriers have an incentive to seek to serve residential as well as business traffic since residential traffic is heaviest during times that are off-peak for business traffic.

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[23] United Telecom Council, *1997 Report on Fiber Optic Applications and Developments in the Utility and Gas Pipeline Industries*, Washington, D.C., 1997.

[24] *Fiber Deployment Update: End of Year 1998*, Table 2 and Table 4.

38. Carriers that have constructed new facilities project substantial growth in sales. For example, Qwest reports that its communications service revenues grew 46 percent between the 2nd quarter of 1998 and the 2nd quarter of 1999, and from $92 million in fiscal 1996 to $1.55 billion in fiscal 1998. Qwest expects to meet its projected target of $3.5 billion for 1999.[25] Level 3 has been projected to have compound annual revenue growth of 66 percent over the next five years.[26]

39. In addition, the expansion of network facilities controlled by emerging carriers ensures that the availability of transport capacity will not constitute a barrier that would prevent emerging carriers, as well as AT&T, from expanding output rapidly in response to any attempt by the merging firm to raise prices or restrict output. Sunk investments in transport and switching facilities likely would allow carriers to expand output very rapidly with little or no additional investment. Further, very substantial increases in output likely would be possible within a matter of months for relatively small additional investments. Some of these investments would be sunk, but the risk a competitor would bear to sink investments to expand output is greatly reduced by the rapid growth in demand for telecommunications transport capacity and bandwidth.

40. In 1995, AT&T submitted a study to the FCC on the ability of other carriers to rapidly absorb demand growth.[27] That study found that, at that time, AT&T's competitors could absorb at least 15 percent of AT&T's switched minutes without any incremental investment, within 3 months could absorb another 17 percent of AT&T's switched minutes by utilizing

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[25] "Corporate Profile" of Qwest Communications, Inc., appearing in *Research* magazine, October 1999.

[26] Pettis Kirkpatrick, *Company Report on Level 3 Communications*, October 29, 1998.

[27] T.L. Brand, G.A. Hallas, T.P. Jamer, G.P. Orbino, D.B. Rom, J.D. Rustwick, and C.R. Wild, "An Updated Study of AT&T's Competitors' Capacity to Absorb Rapid Demand Growth," Attachment to *Ex Parte Presentation In Support of AT&T's Motion For Reclassification As a Nondominant Carrier*, CC Docket No. 79-252, April 20, 1995. The AT&T study analyzed only the capacities of MCI, Sprint, and LDDS/Wiltel.

spare switch ports, within one year could absorb, in total, 63 percent of AT&T's minutes by investing in switching and other equipment but without lighting dark fiber, and within 18 months could absorb all of AT&T's minutes by lighting additional fiber.

41. Although these specific findings cannot be directly applied to determine the current ability of other carriers to expand rapidly and absorb demand now served by MCI WorldCom and Sprint, carriers today surely are not any more constrained by network capacity in their ability to expand output in response to a price increase than were AT&T's rivals in 1995. Indeed, the availability of substantial unused underlying fiber and transport capacity, and technological developments increasing the potential transport capacity of fiber cable, may well mean that the constraint is even less binding today than it was in 1995. First, MCI WorldCom and Sprint supply a smaller proportion of US telecommunications services today than AT&T did in 1995. Second, as documented above, the growth of capacity in the hands of other carriers has been very rapid since 1995. Qwest, for example, has stated that the currently lit portion of its 48-fiber network has sufficient capacity today to handle all of the traffic now carried by AT&T, MCI WorldCom, and Sprint.[28] Third, technological progress has been rapid, which has reduced both the cost of lighting fiber and upgrading capacity and the cost of adding switching capacity.[29]

42. At some point, increasing the volume of switched traffic or circuit bandwidth that could be supplied would require additional investments in lighting fiber or switching capacity or both. The need to make such investments, however, would be unlikely to deter the expansion. Two conditions reduce the risk a carrier bears when it makes these incremental investments. First, we understand that a carrier can, for the most part, scale investments in lighting fiber and

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[28] *Response to Comments on Applications for Transfer of Control of Qwest Communications International Inc. and US West, Inc.*, FCC, CC Docket No. 99-272, p. 13.

[29] See *Fiber Deployment Update: End of Year 1998*, p. 5.

switching capacity so that it need not make substantially more investments than needed for the additional services it projects selling. This condition limits the magnitude of the investment at risk. Second, as discussed above, overall demand for transport capacity and bandwidth has been growing very rapidly, and indeed the rate of growth has been accelerating. As a result, a carrier can invest in capacity to support a hoped-for increase in its share of sales while knowing that, even if it fails to gain market share, normal growth in demand will absorb the additional capacity relatively quickly.

43. The ongoing construction of a number of national and regional high-capacity networks is critical in analyzing the competitive effects of the MCI WorldCom-Sprint merger. Construction of a national or major regional fiber network requires a very substantial capital investment, creates a considerable increment in total industry capacity, and takes a considerable period of time to complete. These conditions make it less likely that *de novo* committed entry, which would require construction of a national network, would be sufficiently likely and timely to defeat an attempt to exercise market power in a telecommunications market that could succeed but for such entry. In fact, however, firms need not construct new national networks to react to any attempt by the merged firm to exercise market power. Instead, they can rely on existing network facilities created by past investments.

44. The capacity of these national networks will be available to support increases in output through a variety of market mechanisms. Vertically integrated firms that have built network capacity can draw directly on this capacity to increase their supply of downstream services to consumers. Other carriers also can draw on this capacity by purchasing switched service at wholesale, by purchasing circuit capacity, or by acquiring control of basic transport capacity through the purchase of dark fiber. Carriers that control these network assets will have an incentive to realize a return on them, either by using them to produce and sell downstream

services, or by the sale of wholesale services or capacity to other carriers that sell downstream services.

## C. Competition in the Supply of Wholesale Services

45. Over the last several years, the sales of wholesale telecommunications services have grown rapidly.[30] This is demonstrated by the growth in toll reseller revenues, which have increased more than five-fold between 1993 and 1998, while their share of total toll revenues has increased from 2.9 percent to 10.3 percent.[31] Emerging carriers, many of which have either built new national networks or control capacity based on these networks, have become very active suppliers of wholesale, as well as retail, minutes and circuit capacity. This, of course, is precisely what would be expected, given the facts and analysis in the previous section.

46. Inputs and capabilities other than transport capacity also are needed to supply wholesale service, but it appears these inputs pose no barrier that would constrain the expansion of supply of wholesale minutes by these carriers.[32] For example, switches and routers are readily available and capacity often can be expanded by adding ports to existing switches or routers. We understand that software for the OSS functions necessary to support wholesale sales, such as billing and provisioning, is available from a number of sources, and that carriers also can outsource some billing requirements.

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[30] As one indicator of this, domestic long distance minutes supplied by switchless resellers—which by definition must be minutes sold as wholesale minutes—have been growing more rapidly than total domestic long distance minutes since 1995 and are projected to continue doing so through 2002. See Frost & Sullivan, *U.S. ATM, Frame Relay, SMDS, and X.25 Public Data Service Markets*, July 6, 1999, p. 5-12.

[31] Jim Lande, *Telecommunications Industry Revenue: 1998*, FCC, Industry Analysis Division, Common Carrier Bureau, September 1999, Table 3, p. 9.

[32] The FCC analyzed various asserted barriers to expansion of supply associated with other inputs and concluded that they would not prevent an expansion in output from being timely, likely, and sufficient to ameliorate competitive concerns. See WorldCom/MCI Order, paras. 51-63.

47. Thus, it is completely unsurprising that many carriers with new networks are supplying wholesale services. A little over a year ago, the FCC, in its Order approving the merger of MCI and WorldCom, identified Qwest, IXC, and Williams—all of which were constructing new networks—as current or prospective suppliers of wholesale service.[33] We understand that all are now providing substantial volumes of wholesale service. Qwest reports that it provides wholesale services to a wide range of customers, who "are taking advantage of Qwest's ability to meet their growing needs for bandwidth."[34] Williams indicates that its business plan is focused on providing voice, data, Internet, and video services to other communications providers.[35] In August 1999, Williams announced that it would begin providing switched voice service on a wholesale basis and that it planned to provide not only basic 1+ and toll-free services but also a range of enhanced voice services.[36] Williams also sells frame relay and ATM services at wholesale.[37] IXC identifies itself as "one of the nation's leading wholesale suppliers of voice, video and data transmission services, switched long distance, private line, Internet backbone and associated services to communications companies."[38] Frontier, which merged with Global Crossing in September 1999, a carrier focusing on international service, also is a substantial provider of wholesale service.[39] Level 3 identifies customers that resell its capacity to others as one of the two customer groups on which it concentrates.[40] The website of Cable & Wireless USA markets a program that offers resellers a "full complement" of switched

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[33] FCC WorldCom/MCI Order, paras. 45, 47, and 48.

[34] http://www.qwest.com/aboutqwest/facts.html, visited November 9, 1999.

[35] http://www.williamscommunications.com/aboutus/index.html, visited November 9, 1999.

[36] http://www.willtales.com/network/pressreleases/rel104.html, visited November 9, 1999.

[37] http://www.willtales.com/network/non_flash/products/frameindex.html and http://www.willtales.com/network/non_flash/products/atmindex.html, visited November 9, 1999.

[38] http://www.ixc-comm.com/corporate/about.htm, visited November 9, 1999.

[39] http://www.frontiercorp.com/annualreport98/mda/page4.html and http:/www.frontiercorp.com/aboutfrontier/newsfiles/1999928-938555869.html, visited November 9, 1999.

[40] http://www.level3.com/Content/1,1233,us|info|faqs,00.html, visited November 9, 1999.

voice services.[41] Still other carriers that are important wholesale suppliers of international minutes and circuit capacity include Star Telecommunications, Pacific Gateway Exchange, Viatel, and Primus.[42]

48. The indications are that wholesale sales of services will continue to grow rapidly, and that carriers with new network capacity will continue to be growing suppliers of wholesale services. A recent Dataquest report on service in North America projected that "Wholesale revenue (measured by the value of carrier-to-carrier transactions) will grow by more than 50 percent during the forecast period [1998-2003], stimulated by intensified market competition and the proliferation of new competitors, including the emergence of new major ones such as the RBOCs, the creation of massive new networks, and the exponential expansion of existing capacity...."[43]

49. These conditions indicate that wholesale services will continue to be available competitively after the merger of MCI WorldCom and Sprint. Carriers other than MCI WorldCom and Sprint are already suppliers of wholesale services and their ability to supply them is likely to grow with or without the proposed merger. In addition, carriers other than MCI WorldCom and Sprint would have the ability and incentive to expand supply rapidly and substantially should the merged firm attempt to restrict their own supply of wholesale services. Many of these carriers have invested in network capacity that currently is relatively underutilized. As a result of these investments, the marginal costs for expanding output of these carriers are lower than they would be if the carriers had not already made these network investments. Carriers that have sunk investments in capacity are likely to have strong

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[41] http://www.cw-usa.net/partners%5Fcarrier.htm, visited November 9, 1999.

[42] See Michael J. Scheele and Cathleen Woodall, "The Market for Refile and Transit Services," in *TeleGeography 1997/98*, pp. 39-44, for a discussion and listing of some new facilities-based international carriers.

[43] Dataquest, *Public Telephony Services North America, 1999: Market Trends*, June 28, 1999, p. 51.

incentives to seize any opportunity to expand supply and capture a greater share of wholesale sales.

50. Still other market conditions make it implausible that suppliers of wholesale services would or could tacitly coordinate their pricing of wholesale services. Many contracts for wholesale service are for very large volumes over a substantial period of time. In addition there are often substantial variations among contracts regarding the precise set of services being purchased—for example, over the locations to which minutes will be terminated. Similarly, terms such as the nature and level of commitment to purchase service and the penalties for failing to meet that commitment vary across contracts, and contract prices and terms often are not made public.

51. Economic theory predicts that tacit coordination of pricing would be extraordinarily difficult to maintain under these circumstances. The facts that contracts vary and that their terms are private make it difficult for one firm to know if another were "cheating" on a tacit agreement. The fact that contracts often cover a large volume of sales over a long period increases the payoff to "cheating" relative to the potential costs of "retaliation" for detected cheating. These conditions provide strong reasons to believe that the ability and incentive of many individual carriers to expand their sales of wholesale service will ensure the continued competitive supply of such services after the MCI WorldCom-Sprint merger.

## III. THE GROWING MARKET SUCCESS OF EMERGING CARRIERS

52. The enormous and continuing growth of long distance transmission capacity controlled by emerging carriers is perhaps the most critical factor in the changing environment in which the merged MCI WorldCom-Sprint will compete. As we have emphasized in the previous section, the availability of that capacity has dramatically reduced the dependence of other long

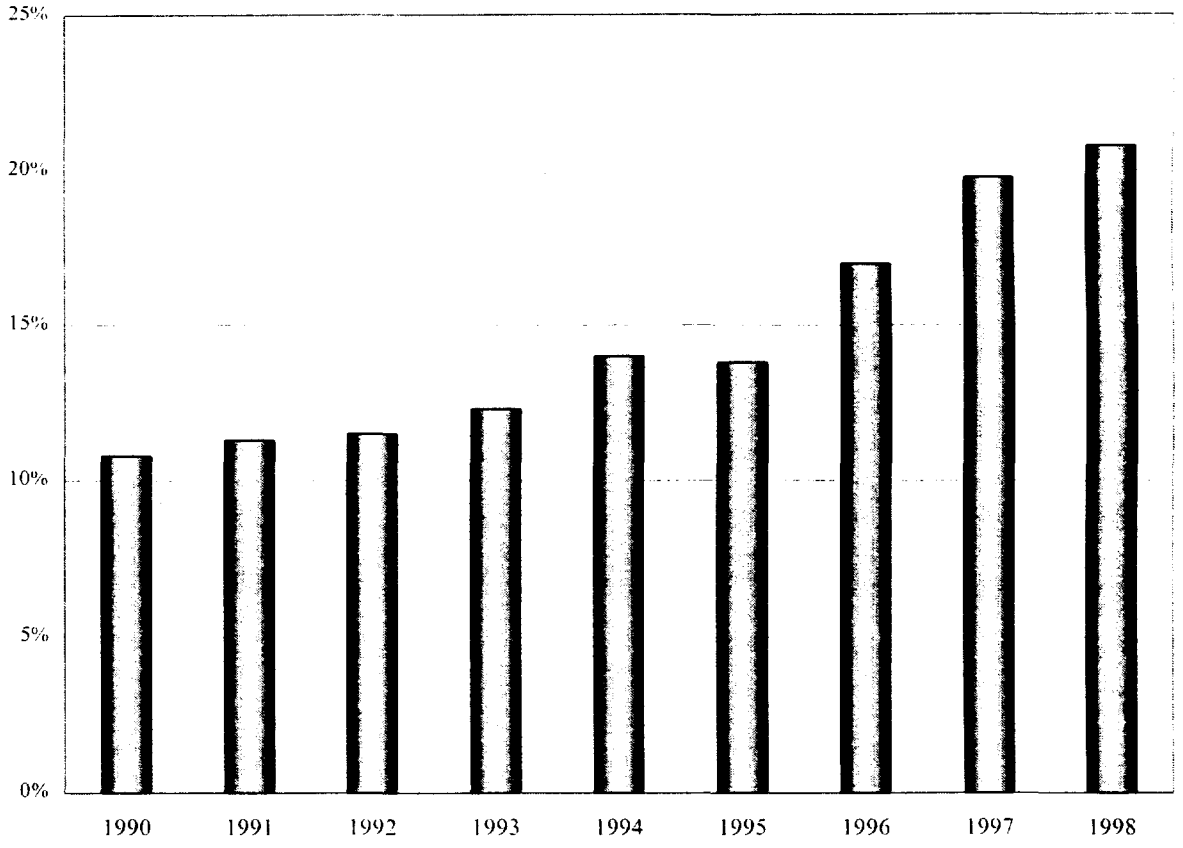
distance carriers on the larger carriers for an important input. Moreover, the ability of other carriers, old and new, to use already existing capacity to expand output in the face of any attempted price increase provides an important competitive constraint on the merged firm. This capability is increasing as the capacity controlled by emerging carriers continues to grow rapidly. Emerging carriers not only have access to transmission capacity that will permit them to expand their output, but they have an already demonstrated ability to attract customers from the major long distance carriers.

53. The share of toll revenues accounted for by entrants into long distance service has grown at a rapid rate during the past decade. Over the period from 1990 to 1998, the latest year for which FCC data are available, the share of total residential and business toll revenues accounted for by long distance carriers other than AT&T, MCI WorldCom, and Sprint increased from 10.8 percent to 20.8 percent, and there is no reason to believe this trend has been interrupted in the past year.[44] Figure III-1 shows this trend.

[44] These data are drawn from Table 11.3 in the FCC's *Trends in Telephone Service, September 1999*. Revenue reported for WorldCom for all years is included as MCI WorldCom revenue. If the WorldCom revenues had not been added to those of MCI WorldCom, the share of revenues accounted for by emerging carriers in 1997, the last year in which separate MCI and WorldCom data were available, would have been 26.3 percent while it was 19.8 percent including WorldCom with MCI. Local exchange carriers are not counted as long distance carriers in these data.

**Figure III - 1**

## Emerging Carriers' Share of Total Toll Revenue of Long Distance Carriers




Source:
*Trends in Telephone Service*, Industry Analysis Division, Common Carrier Bureau, FCC, September 1999, Table 11.3.

Note:
Emerging carriers include all carriers other than AT&T, MCI WorldCom, and Sprint. Total toll revenues of long distance carriers does not include toll revenue of local exchange carriers.

54. The combined revenue share of these "other" carriers is divided among approximately 1,000 providers, including facilities-based carriers, pure resellers, and carriers with their own facilities that also engage in some resale.[45] These carriers offer a broad range of long distance services throughout the country, ranging from relatively simple voice services supplied to residential customers to high-quality advanced voice and data services for large business customers.

55. This section considers separately the performance of emerging telecommunications carriers in providing service to the "mass market" residential customers and small businesses where purchases of services are made at posted prices, and their performance in selling to "larger businesses"—medium-sized and large business customers—where competitive bidding and negotiated contracts are the norm.[46] The section concludes with a discussion of prospects for the RBOCs after they are permitted to offer in-region long distance service.

## A. Mass Market Customers

56. High churn rates are a fact of business for long distance carriers as customers continue to demonstrate their willingness to switch carriers in order to obtain lower prices. As far back as 1995, the FCC found that residential customers would readily switch carriers to obtain price reductions or desired features, citing an AT&T study that showed that 20 percent of its residential customers, accounting for 19 percent of its revenues, change carriers at least once a

[45] This estimate of the number of carriers is based on the number of carrier identification codes assigned by the North American Numbering Plan Administration. In its *Trends in Telephone Service, September 1999*, the FCC states that these are the "best available" data on the number of carriers (p. 10-1). To arrive at our estimate, we subtracted all but one of the multiple codes assigned to large carriers and removed firms whose business is not related to the provision of long distance service (e.g., government agencies).

[46] For the purposes of this paper, we organize our discussion around, without necessarily endorsing, the FCC's delineation of relevant markets as presented in, for example, the WorldCom/MCI Order, para. 24.

year.[47] More recent reports indicate that annual churn rates now approach 30 percent for major long distance carriers in the U.S.[48]

57. Emerging carriers have been net winners in the competition for residential customers, as they have gained market share in recent years at the expense of the three old-line interexchange carriers in recent years. According to data reported by the FCC, by 1998 emerging carriers collectively (defined to be all firms except AT&T, MCI WorldCom, and Sprint) provided nearly 18 percent of all residential toll calling revenues, more than three times Sprint's share of 5.7 percent and nearly equal to MCI WorldCom's share of 18.4 percent.[49] Over the period from 1995 to 1997, the share of residential service provided by emerging carriers grew while AT&T's share declined by about 7 percentage points and the shares of MCI and Sprint were generally stable.[50] Table III-1 and Figure III-2 below show the growth from 1995 to 1997 of the collective share of service to residential customers supplied by emerging carriers, growth which has been substantial by any of the several measures. Significantly, by 1997, new carriers served almost 15 percent of access lines, provided more than 17 percent of direct dial toll minutes, and captured more than 18 percent of total toll revenues, and these figures have undoubtedly grown in the ensuing years.

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[47] *In the Matter of the Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, FCC, CC Docket No. 95-427, adopted October 12, 1995, para. 63.

[48] Arthur D. Little, Inc., "The Innovation Premium: Creating It, Sustaining It, Leveraging It For Growth: Industry Outlook Report," Third Quarter 1999, p. 2.

[49] See FCC, Industry Analysis Division, Common Carrier Bureau, *Trends in Telephone Service*, September 1999, Table 11.5.

[50] See FCC, Industry Analysis Division, Common Carrier Bureau, *Long Distance Market Shares, Fourth Quarter 1998*, March 1999, Tables 4.1 – 4.3, pp. 23-25. Note that the 1998 figures are not strictly comparable with those for earlier years because WorldCom is combined with MCI for 1998. Comparable figures cannot be constructed for 1995 to 1997 because the FCC does not report data for WorldCom separately for these years. The FCC has said, however, that WorldCom was not a significant supplier of service directly to residential end users (WorldCom/MCI Order, para. 33).

**Table III-1**

**Shares of Residential Access Lines, Toll Revenue, and Direct Dial Toll Minutes. 1995—1997**

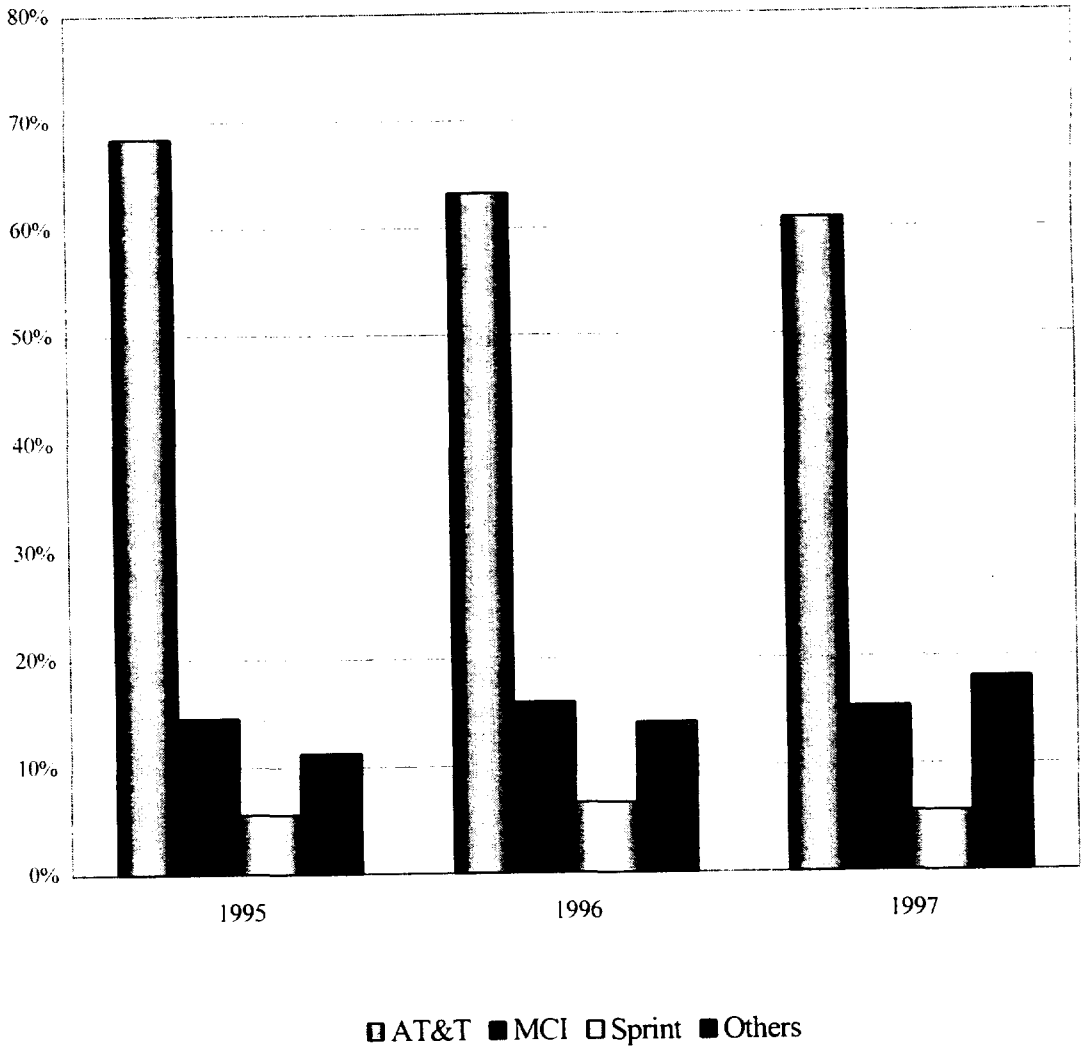
| | 1995 | 1996 | 1997 | Change in Share Points 1995-1997 |
|---|---|---|---|---|
| **Access Lines (Total US)** | | | | |
| AT&T | 74.6% | 69.9% | 67.2% | (7.4) |
| MCI | 13.0% | 13.7% | 12.6% | (0.4) |
| Sprint | 4.2% | 5.0% | 5.7% | 1.5 |
| **Others** | **8.3%** | **11.4%** | **14.5%** | **6.2** |
| **Total Revenue (Total US)** | | | | |
| AT&T | 68.5% | 63.3% | 60.9% | (7.6) |
| MCI | 14.6% | 16.0% | 15.4% | 0.8 |
| Sprint | 5.6% | 6.6% | 5.6% | 0.0 |
| **Others** | **11.3%** | **14.1%** | **18.1%** | **6.8** |
| **Direct Dial Toll Minutes (Total US)** | | | | |
| AT&T | 68.6% | 61.3% | 61.7% | (6.9) |
| MCI | 16.2% | 16.4% | 14.8% | (1.4) |
| Sprint | 5.8% | 7.0% | 6.2% | 0.4 |
| **Others** | **9.4%** | **15.4%** | **17.3%** | **7.9** |

Source: FCC, Industry Analysis Division, Common Carrier Bureau, *Long Distance Market Shares, Fourth Quarter 1998*, March 1999, Tables 4.1– 4.3.

58. These data reflect the increasing competitive pressure that emerging carriers are placing on their larger rivals. The fact that many of these firms are rapidly expanding their own physical capacity (as detailed above) and have been able to finance the large investments necessary to do so demonstrates their confidence, and the confidence of the capital markets, that they will be able to continue expanding rapidly in the future. Other emerging carriers selling to mass market customers are resellers with more limited network assets but, because of the large amount of available capacity controlled by new carriers, the fact that they do not own their own networks will not prevent their continued expansion.

## Figure III - 2

## Shares of Residential Toll Revenue 1995-1997




Source:
*Long Distance Market Shares: Fourth Quarter 1998*, Industry Analysis Division, Common Carrier Bureau, FCC, March 1999, Table 4.2.

59. Emerging carriers offer traditional dial-one subscription long distance products. The data in Table III-1 above show that the share of residential access lines served by emerging carriers grew from 1995 to 1997 and that by 1997 emerging carriers had captured 17 percent of direct dial toll minutes. Although more current data are no longer collected and reported, emerging carriers accounted for 12 percent of *all* presubscribed lines in December 1996, indicating that they had become the primary carrier for a significant share of customers, even by that date.[51]

60. Emerging carriers have also been able to expand rapidly in part because they have been innovators in developing new products and finding new marketing approaches that compete with traditional subscription long distance services, and this has served to intensify the competition faced by the larger carriers. As discussed in more detail below, emerging carriers have been leaders in developing dial around services and prepaid calling cards, and collectively account for half or more of the sales of these products. At the same time, total sales of these products are growing rapidly and they account for an increasing share of long distance service revenues from mass market customers.

61. The entry of new carriers and their ability to capture a significant share of mass market sales have not gone unnoticed by the older carriers. Indeed, these carriers have responded to entry by introducing their own new products. To understand fully the competitive significance of the new carriers, it is useful to review some of the specific ways in which their entry has intensified competition in the supply of service to the mass market.

[51] See FCC, *Long Distance Market Shares, Fourth Quarter 1998*, Table 2.2. WorldCom is not included as an "emerging carrier" in this tabulation.

## DIAL AROUND PRODUCTS

62. Dial around products allow consumers to dial Carrier Identification Codes in order to use, on a per-call, per-transaction basis, carriers other than their presubscribed long distance carrier. Over 95 percent of revenues for dial around calls are generated by the residential segment, and it has been estimated that one in five Americans has used 10-10-XXX numbers for long distance calling at least once.[52] Dial around services were estimated to generate revenues of $2.51 billion in 1998, an increase of 53 percent from the $1.64 billion in dial around revenues in 1995, and annual growth rates for dial around services are expected to remain above 20 percent until at least 2002.[53] Dial around accounted for 3 percent of all international and interstate telephone revenues in 1998.[54] The product was initially offered by new carriers, such as VarTec with its DimeLine product, StarTec with 10-10-719, and EXCEL Communications with 10-10-297 and 10-10-457.[55] These firms aggressively increased consumer awareness and usage of these services through extensive advertising and promotional campaigns.[56]

63. The top three subscription carriers found themselves significantly affected by this new product. It has been estimated that 26 percent of MCI customers, 24 percent of Sprint customers, and 15 percent of AT&T customers used dial around services in 1998, while AT&T attributed a $171 million loss of revenue in the 3rd quarter of 1998 to dial around competition.[57] These carriers responded to this competition from dial around services with

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[52] Frost & Sullivan, *The US 10-10-XXX Dial-Around Services Market*, 1999, pp. 5-1, 5-2, 5-21.

[53] *Ibid.*, p. 1-4.

[54] Ronald Rosenberg, "Dial Around or Run-A-Around? Talk is Cheaper but Confused Users Decry Firm's Failure to Communicate Their Terms," *The Boston Globe*, November 15, 1998, p. E-1.

[55] Frost & Sullivan, *The US 10-10-XXX Dial-Around Services Market*, 1999, pp. 11-10, 11-18, 11-21.

[56] *Ibid.*, p. 3-19.

[57] Beth Synder, "AT&T Joins Wave of Marketers Hiding IDs Behind New Brands: Lucky Dog Dial-Around Service Aims for Value-Conscious Crowd," *Advertising Age*, November 2, 1998, p. 17.

their own offerings, with MCI World Com responding first and most aggressively.[58] Interestingly, when MCI World Com and AT&T introduced their dial around offerings, they did not associate them with their brand names. Thus, whatever branding advantages these carriers may have in other long distance segments, they are not present for dial around service. Estimated 1998 shares of dial around services are presented in Table III-2 below.[59]

**Table III-2**

**10-10-XXX Dial-Around Shares: 1998**

| Company | Share (%) |
|---|---|
| MCI WorldCom | 45 |
| VarTec Telecom | 20 |
| EXCEL Communications | 12 |
| Cable & Wireless | 8 |
| AT&T | 6 |
| World xChange | 5 |
| Others * | 4 |
| Total | 100 |

* Includes ALLTEL, American Long Lines, American TeleSource International, ATX Telecommunications Services, Bee Line Long Distance, BTI, Century Telephone Enterprises, CGX Communications, Chautauqua Erie Telephone Corp., Cognigen, Frontier, GST Action Telecom, Intermedia Communications, Matrix Telecom, McLeod USA, NEXTLINK, NTS Communications, PacWest Telecom, PT-1 Communications, Qwest, Sprint, StarTec, and U.S. Link.

Source: Frost & Sullivan, *Market Engineering Consulting Report: The US 10-10-XXX Dial-Around Services Market*, 1999, p. 5-15.

64. Although MCI WorldCom, with its several dial around products, has the largest share, emerging carriers have about half the business and more than 50 firms provide this product.[60] Three emerging carriers have estimated shares greater than AT&T. Sprint's

[58] Frost & Sullivan, *The US 10-10-XXX Dial-Around Services Market*, 1999, p. 5-16.

[59] *Ibid.*, p. 5-15.

[60] *Ibid.*, p. 3-4.

share, notably, is sufficiently small so that, rather than being presented separately, it was simply lumped together with "others."

## PREPAID CALLING CARDS

65. Prepaid calling cards are another popular product initially developed by new carriers. Among the pioneers in offering this service were STAR Telecom through its subsidiary PT-1 Communications, which remains one of the largest providers of prepaid cards, and Vartec, with its Phone Pass product.[61] Although prepaid cards were initially marketed to consumers for whom obtaining long distance service directly was either difficult or impossible, this product has gained acceptance as part of the mainstream market.[62] Prepaid card revenue grew from $430 million in 1995 to $1.86 billion in 1998, an increase of 330 percent, and it is expected to increase by another 47 percent in 1999, reaching $2.73 billion. Projected annual growth rates are expected to remain above 18 percent until at least 2005.[63] Prepaid cards accounted for 19 percent of all calling card revenues in 1998.[64]

66. Again, AT&T, MCI WorldCom, and Sprint responded by introducing their own prepaid cards in an attempt to counter this competitive threat. Table III-3 below shows estimates of prepaid calling card revenues for 1998. Although MCI WorldCom, AT&T, and Sprint are the three largest providers, their combined share is only 35 percent and PT-1 Communications' share is as large as Sprint's. Over 400 other carriers account for the

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[61] http://www.vartec.com and http://www.pt-1.com, visited November 9, 1999.

[62] Frost & Sullivan, *The US Calling Card Services Market*, 1999, p. 1-7.

[63] *Ibid.*, p. 5-11.

[64] *Ibid.*, p. 4-10.

remaining 65 percent of revenues.[65] This intense competition, fueled by a lack of consumer loyalty, has led to the outbreak of what have been described as price wars.[66]

**Table III-3**

**Prepaid Card Calling Service Shares**
**1998**

| Company | Market Share (%) |
|---|---|
| MCI WorldCom | 13 |
| AT&T Corporation | 12 |
| Sprint | 10 |
| PT 1 Communications | 10 |
| SmarTalk Teleservices, Inc. | 8 |
| IDT Corporation | 8 |
| RSL COMM USA | 6 |
| Others * | 33 |
| Total | 100 |

* Includes Access International, American Prepaid Corporation, Ameritech, ATCALL Inc., Bee Line Long Distance, Bell Atlantic, BellSouth, Blackstone Calling Card, Cable & Wireless, Call Concepts Corporation, Cardtronics, Communitel, Conexus, Cross Communications, DIGITEC 2000, EconoPhone, Excel Switching Corporation, Galaxy Telecommunications, GE Exchange, GTE Corporation, IdealDial Corporation, ILD Teleservices, Long Distance International, Locus Telecommunications Inc., Prepaid Communications Inc., PTT Telekom, Quest Group International, Qwest LCI, SBC Communications, SNET, Teltrust, US WEST, VoCall Communications, and World xChange Communications.

Source: Frost & Sullivan, *Market Engineering Consulting Report: The US Calling Card Services Market*, 1999, p. 5-21.

67. The prepaid calling card business is expected to continue to grow and gain an increasing share of the total calling card business.[67] Carriers such as Qwest, Ameritech,

[65] *Ibid.*, pp. 5-3, 5-21.

[66] *Ibid.*, p. 5-8.

[67] Frost & Sullivan, *The US Calling Card Services Market*, 1999, p. 1-5.

and BellSouth have been active in developing exclusive retailing and co-branding agreements, arrangements that it is predicted will be important for future success.[68]

68. Calling card providers are expected to continue developing their products in an attempt to gain a competitive edge by offering features such as Internet telephony, voice recognition and encryption, conference calling, speed dialing, voice messaging, and international origination.[69] Here, too, the emerging firms have provided leadership. For example, RSL Com and Delta Three have introduced "net.com," a prepaid card service that routes calls through the Internet and offers savings of 20 percent to 60 percent compared to traditional services.[70]

## MARKETING AND PACKAGING INNOVATIONS

69. Emerging carriers have also been leaders in finding innovative ways to reach consumers. Some of these carriers are using direct mail campaigns.[71] EXCEL, now a subsidiary of Teleglobe, which is a large supplier of international long distance services, brought its long distance products to market through what has been called the "Tupperware Approach," which consists of using a network of representatives who market the company's products to family, friends, and business associates.[72] Another development has been the expansion of international long distance services whose marketing is targeted

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[68] *Ibid.*, p. 4-3.

[69] *Ibid.*, p. 1-7.

[70] *Ibid.*, p. 4-2.

[71] Frost & Sullivan, *The US 10-10-XXX Dial-Around Services Market*, 1999, pp. 6-4, 6-5.

[72] *Ibid.*, p. 6-6.

to specific ethnic groups within the U.S. A leader in this area is PinTouch Telecom, a joint venture between Pacific Gateway Exchange and Teleglobe, formed in 1997.[73]

70. Emerging carriers also have been innovators in packaging basic long distance services with other forms of residential and small business telecommunications services, including Internet access, local telephony, wireless communications, and cable television. For example, Talk.com has partnered with AOL, the largest ISP, to provide basic long distance services exclusively via AOL. This package claims the attractive feature of offering the first and only "real time" electronic delivery of call detail and billing information.[74] Carriers offering Internet access combined with long distance service include Qwest, Frontier, Cable & Wireless, RSL Com Group, and GTE.[75] In addition to combining Internet and conventional wireline long distance telephony as a marketing tool, a number of emerging carriers are combining the transmission of voice and Internet data using IP telephony. GTE adds to this package local telephone service in the 28 states where it offers that service, as does SBC's subsidiary, SNET, which is a harbinger of things to come when the RBOCs are permitted to offer in-region long distance service. [76]

71. Wireless telephony is another part of some offerings, and one that is beginning to provide direct competition to traditional wireline long distance service. The FCC reports that almost 6 percent of wireless calls were interstate calls.[77] The increasing popularity

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[73] http://www.pgexchange.com/pgmain/ethmark.htm, visited November 11, 1999.

[74] http://talk.com/talk/fiveld/faqs.htm, visited November 10, 1999.

[75] See their respective web pages.

[76] http://www.gte.com visited November 10, 1999.

[77] Jim Lande, *Telecommunications Industry Revenue: 1998*, Table 5, p. 12.

and usage of wireless services are expected to shift demand away from traditional long distance carriers.[78]

72. In sum, emerging long distance carriers have had demonstrated and growing success in marketing service to residential and small business customers. Over the past several years, they have obtained a steadily growing share of sales and have had an increasing competitive impact. By developing new products, finding new marketing approaches, and aggregating telecommunications products into attractive packages for consumers and small businesses, these firms have provided increasing competition to all old-line long distance carriers. Emerging carriers already have grown to the point that their combined share of sales to mass market customers rivals that of MCI WorldCom and considerably exceeds that of Sprint, and their presence has provoked responses from the larger carriers. Moreover, as the FCC has noted, the willingness of residential consumers to switch carriers, as indicated by high churn rates, suggests the declining significance of brand-name recognition and historic good will.[79] Any attempt by the merged MCI WorldCom-Sprint to raise price and exercise market power would provide an opportunity both for the emerging carriers to accelerate their already growing sales to customers and for AT&T to slow or reverse the fall in its share of these sales.

## B. Larger Business Customers

73. Larger business customers are very knowledgeable about both the complex array of telecommunications products they buy and the range of alternatives available for meeting their demands for telecommunications services. These customers also add to their own

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[78] Frost & Sullivan, *The US 10-10-XXX Dial-Around Services Market*, 1999, p. 5-9.

[79] *In the Matter of the Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, FCC, CC Docket No. 95-427, adopted October 12, 1995, para. 66.